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ABSTRACT

An assessment of a four-stage conceptual model reveals that critical thinking has indirect positive effects on political participation through its direct effects on personal control, political efficacy, and democratic attitudes. The model establishes causal relationships among selected personality variables (self-esteem, personal control, and political efficacy), critical thinking, democratic attitude, and political participation. A total of 118 undergraduate and graduate students were given a series of instruments to measure these variables. Data were analyzed using path analysis to determine direct and indirect relationships among the variables. Critical thinking positively affects personal control, political efficacy, and democratic attitude. Political efficacy and democratic attitude positively affect political participation. Personal control has a strong direct effect on political efficacy. Thus, critical thinking is significantly related to political participation. The implications are that the teaching of critical thinking should be a major focus of citizenship education. Copies of measurement instruments and statistical tables are included. (KC)

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CRITICAL THINKING AND POLITICAL PARTICIPATION: THE DEVELOPMENT AND ASSESSMENT OF A CAUSAL MODEL

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Statement of the Problem

Two of the major goals of education general, and of social studies education particular, are education for citizenship and the development of the ability to think critically. Traditional concepts of citizenship have focused on a citizen cognizant of factual knowledge about how the government operates, a citizen respectful of authority, and a citizen who has desirable attitudes and habits which generate support for the system and the status quo. In general, this narrow focus regarding citizenship has yielded to more contemporary views that emphasize, skills in communication, decision-making, conflict resolution, and other areas relevant to citizenship competence and political participation (Thompson, 1970; Remy, 1979; Massialas, 1972; Eyler, 1977). Extensive lists of citizenship characteristics and goals have been made and revised, and definitions of the good citizen abound. Each shares, explicitly or implicitly, a common orientation, and that is a focus on participation as a major component of citizenship. As Reshon (1974) states, "citizen participation has been incorporated as one of the defining characteristics of political democracy" (p. 14). Thus, a primary goal of social studies education is to develop citizens who are willing and able to participate politically.

Beyond stating that social studies education should develop a "commitment to democratic participation," the National Council for the Social Studies Curriculum Guidelines (1971) state that a further goal is to develop abilities in "intellectual skills, usually called thinking." Many statements exist in the social studies education literature that affirm this commitment to critical thinking as an educational ideal (Burton, Kimball, and Wing, 1960; Decaroli, 1973; Fair and Shaftel, 1967).

Little evidence supports a contention that these 2 goals of social studies education, political participation, and critical participation, are being observed or realized. Regarding the impact of education on political participation, Ehman (1980) concludes from a review of the literature, "that schooling is more closely linked as an important socialization agent in the acquisition of political knowledge and awareness than as a shaper of political attitudes and participation (p. 103). Litt (1968), Langton & Jennings (1968), and Jennings, Langton, and Miemi (1974) report that civics courses have little effect upon students' attitues toward political participation. Levenson (1972) finds a lack of congruence between teacher-expressed goals of citizenship education and political participation. Also, despite its prominence in the social studies education literature and in social studies curriculum guidelines, the pronounced goal of critical thinking has not been borne out in practice. Parsons and Shaftel (1967) conclude from interview data that:

> though the participating teachers were able to articulate the professional ideology regarding thinking, they had only the vaquest

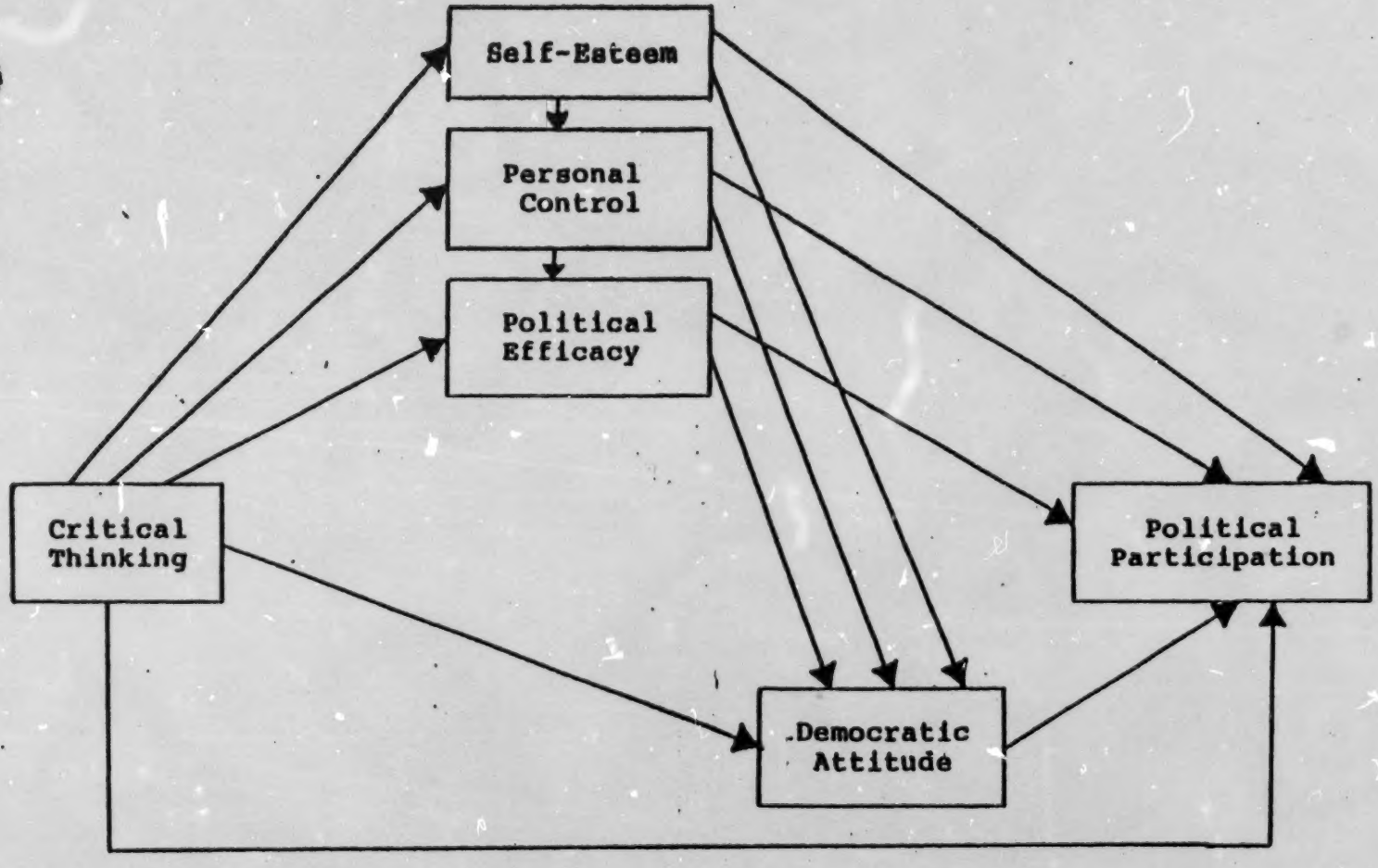


Fig. 1. Hypothesized conceptual model examining the relationship between critical thinking and political participation.

> of notions of what thinking is. They tend to conceive of thinking...as a behavioral event rather than as a cognitive process. consequently, their efforts to teach for thinking usually consisted of provisions or requirements for the event to occur. Evidence that the behavioral event had "happened" was provided by the pupil production of a standardized written or verbal statement (p. 127).

Shauer, Davis, and Helburn (1979) report findings from a national survey and an extensive review of the literature that indicate the absence of teaching for critical thinking. Among these findings are the following.

1. The dominant instructional tool is the texbook.

2. The dominant modes of instruction continue to be large-group, teacher-controlled recitation and lecture.

3. Recitation of facts is considered knowledge.

It is apparent that critical thinking is not receiving the emphasis in the classroom that it receives in purpose statements for the social studies. As Azlesworth and Reagan (1969) states, "In spite of protestation to the contrary, the schools tend to teach what to think rather than how to think" (p. 4).

If, as the research indicates, the development of critical thinking and participatory citizenship education are dominant goals in the social studies that are not being achieved, the question arises as to what, if any, relationship exists between the two goals. If such a relationship does exist, it could partically explain why neither are realized. Is the ability to think critically related to participatory attitudes and behavior? If such a linkage does exist, what is the nature of the relationship? Is it a direct relationship or an indirect one through intervening variables? Is critical thinking prior to and prerequisite to political participation? Is political participation directly related to critical thinking? What other variables are relevant in the relationship, if there is relationship between critical thinking and political participation?

The purpose of this study was to develop and assess a conceptual model examining the relationship between critical thinking and political participation. The hypothesized model is depicted in Figure 1. The hypothesized relationships in the model are supported by data presented below. The purpose of the study was to evaluate the four-stage causal model. The first stage of the model will demonstrate the effect of critical thinking on selected personality variables (self-esteem, personal control, and political efficacy). The second stage of the model will demonstrate the effects of self-esteem on personal control and political efficacy and of personal control on political efficacy. The third stage of the model will demonstrate the relative effects of critical thinking and the personality variables on democratic attitude. The fourth stage of the model will demonstrate the relative effects of critical thinking, the personality variables, and democratic attitude on political participation. The direct effect of critical thinking on political participation is compared with its indirect effects mediated by personality variable in order to determine what relationship exists between critical thinking and political participation and what intervening variables contribute to the relationship. Path analysis is employed to test the hypotheses proposed by the model.

Hypotheses

The following hypotheses are implicit in the model depicted in Figure 1. Theoretical and empirical support for the hypotheses is presented below.

Critical thinking is an exogenous variable, and no hypotheses as to its origins are postulated. Effects on critical thinking are entirely without the model. Critical thinking has a direct and positive effect on political participation. Critical thinking also has an indirect and positive effect on political participation mediated by the personality variables.

The personality variables of self-esteem, personal control, and political efficacy are functions of critical thinking and of each other and unidentified variables from without the model. Self-esteem has a direct and positive effect on personal control and on political efficacy. Personal control has a direct and positive effect on political efficacy. These variables each have a direct and positive effect on democratic attitude. The personality variables (self-esteem, personal control, and political efficacy) have an indirect and positive influence on political participation through the development of democratic attitudes, as well as a direct influence.

A democratic attitude is a function of critical thinking, self-esteem, personal control, political efficacy, and unspecified variables without the model. The democratic attitude variable has a direct and positive effect on political participation.

Thus, political participation is hypothesized to be a function partically of the personality variables (self-esteem, personal control, and political efficacy), partially a function of democratic attitude, and partially a function of critical thinking. A democratic attitude is hypothesized to be a function of the personality variables and of critical thinking. Self-esteem, personal control, and political efficacy are hypothesized to be a function of each other and of critical thinking. The model is a causal model delineating the relationships and the direction of the relationships.

A General Theoretical Framework for the Model

Specific theoretical and empirical support for the model will be presented below. The purpose of this section is to establish the model within the general theories on which it is based. The framework of the model is drawn from:

1. Political socialization theory whereby such variables as democratic attitude and political efficacy are related to political participation. (Auerback and Walker, 1973; Abramson, 1977; Berelson, Lazarsfeld, and McPhee, 1954; Dawson and Prewitt, 1969, Langton, 1969, and others cited below).

2. Psychological need theory and political personality theory whereby psychological needs such as self-esteem and personal control are posited and are related to personality development and political attitudes. (Barber, 1965; Bronfenbrenner, 1960; Contril, 19741; DeRenzo, 1974; Hennesey, 1959; Knutson, 1973; Lane, 1959 and others cited below).

3. Cognitive and cognitive-developmental theories which outline the cognitive capacities and their functions (Adelson and O'Neil, 1966; Connell, 1975; Dewey, 1929; Merelman, 1973; Schwebel & Raph, 1975, and others cited below).

The basic outline of the model is as follows. Certain psychological needs (self-esteem, personal control, political efficacy) exist. The satisfaction of these needs has cognitive antecedents (critical thinking ability being one). Satisfaction of the needs has consequences for the personality (democratic or not) and for attitudes and behavior (political participation), both of which have cognitive components.

Self-esteem has a central place in most need theories. Lane (1964) states, "Somehow self-esteem seems to be bound up with all activity; it seems to be an ingredient of all other needs" (p.38). Maslow's (1954) theory of human needs places self-esteem as the next to highest type of need in his hierarchy of needs. Other psychologists also acknowledge the importance of self-esteem, but it is Maslow's theory that is utilized in this study.

Personal control is also posited as a basic human need. Maslow's theory places this need as a component of the esteem needs, conceptulaized as "the desire for strength, for achievement, for adequacy, for mastery and competence, for confidence in the face of the world, and for independence and freedom" (p. 72). Bay (1977) speaks of personal control as "a broad range of need attributes, all having to do with the person's sense of being a chooser and maker of decisions that do have some probable influence and benefit affecting at least one's own life." DeCharms (1976) claims that, "Man strives to be a causal agent, to be the primary locus of causation, or the origin of his behavior" (p. 4). It is Renshon (1974), though, who most clearly establishes the need for personal control and whose conception of personal control is employed in this study. Renshon relies on evidence from several sources to support his contention that personal control is a basic human need. Human infants first cry only to satisty their somatic needs but later use the same methods to exert control over their own lives. Animal studies conducted in the field of comparative psychology establish strong evidence that animals have a need for control over certain situations that affect them directly. Renshon also cites psychoanalytic theory and evidence from social psychology to buttress his theory.

Political efficacy is usually presented in the political socialization literature as an attitude and not a need, but as a logical extension of the need for personal control, it is construed as both in this study. (The satisfaction of these needs precludes certain attitudes.) As Renshon puts it, political efficacy is "an attitudinal manifestation of a basic personality orientation" (p. 7). Renshon suggests that the need for personal control extends to any arena that has salience in one's life. He states that political life achieves salience in most lives in three ways: (1) through the existence of a highly centralized and technologically sophisticated government apparatus that extends its reach into the life of all citizens; (2) through the widespread impact of most political events; and (3) through the normative prescription for a good citizen as an active one (pp. 49-51). Thus, if political life is an important area for the individual, control of that area becomes a need.

What has been referred to as needs, self-esteem, personal control, and political efficacy, and as a certain type of personality, democratic

personality, are also basic attitudes that serve to organize the whole personality. The role of such attitudes is described by Knutson (1977).

> In analysing the psychological factors which influence their political activity, we define personality as the organized, stable internal predisposition which each person brings to a situation, which serve to orient his behavior and which vary among individuals (p. 97).

Manheim (1975) agrees by stating the

> premise that much of what we generally refer to as "political behavior" can be best understood in the context of certain attitudes that people hold. In a very real sense, these attitudes are the building blocks of political activity (p. 7).

Most personality theorists assign cognitive and affective properties to an attitude. Two examples are:

1. An attitude is a stable or fairly stable organization of cognitive and affective processes around some object or referent (Sarnoff & Katz, 1954, p. 116).

2. An attitude can be defined as an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world (Ketch & Crutchfield, 1956, p. 19).

This study is concerned with motivational aspects of certain attitudes as they bear on political participation and with cognitive aspects of the attitudes that are precursors to positive attitude development.

The satisfaction of needs has certain consequences for the personality and for political activity. In this model, the need itself is not viewed as a motivation of political participation but its satisfaction is construed as a facilitator of the democratic personality and a motivator of political participation. Renshon (1974) puts forth an argument for the need for personal control and political efficacy as motivators of political participation, but most theories and empirical evidence support the relationship depicted in the model (and Renshon's research does not refute it), that of need satisfacton promoting political participation. Maslow (1956 states that

> a satisfied need is not a motivator.....I should say simply that a healthy man is primarily motivated by his needs to develop and actualize his full potentialities and capacities (p. 57).

It could be posited that the satisfaction of lesser needs enables one to participate politically in order to satisfy the need for self-actualization, Maslow's highest need in the hierarchy.

Also, development of the democratic personality is facilitated by need satisfaction. Empirical evidence (presented below) indicates that a person with high self-esteem and feelings of personal and political control is more likely to adhere to democratic norms and values. Evidence also supports the notion that a person with a democratic personality is more likely to

participate in the political sphere. Thus, the consequences of need satisfaction bear directly and indirectly on political participation and directly on th development of democratic attitudes.

According to the model, critical thinking is an antecedent of need satisfaction, of the democratic personality, and of political participation. Most of the literature relating to the cognitive aspects of these variables is theoretical. It is implied in the writings of need theorists, political personality theorists, and political scientists and in the nature of the variables that the ability to comprehend and organize one's world has positive consequences.

Smith, Bruner, and White (1956) in a delineation of the characteristics of personality, put forth that cognition functions not just in the service of other needs but is intrinsically motivated by an "effort after meaning" (p. 32). Kate (1971) lists as one of four functions of an attitude the knowledge function. This function is based on the individual's desire to give structure to the universe, on a search for meaning and a need to understand (pp. 206-207). If attitudes have a cognitive component, if psychological consonance is a basic striving within humans, and if attitudes serve to help organize one's world in a more comprehensible fashion, then it seems that the ability to think critically would have an important impact on attitudes. This study makes the assumption that is implicit in other studies explicit in the model.

Relationship Among the Variables

Critical Thinking and Political Participation

Very little empirical research bears directly on a relationship between critical thinking and political participation. Wilson (1954) does find, in a study of factors associated with participation in grassroots civic meetings on a college campus, that a capacity for critical thinking is positively related to such participation. Smith (1968) discovers a commmon characteristic among Peace Corps volumteers that is related to critical thinking; they maintain a highly articulate intellectual formulation of their situation and their problems. Bennett (1975), in developing and assessing a model of cognitive development in political socialization, finds a significant and postive relationship between grassroots activism and cognitive complexity. He is more interested in the idea that activism enhances cognitive complexity, especially in the political realm, but he states that the relationship extends in both directions. His isolation of the one direction is based on his theoretical interests.

The theoretical perspective regarding critical thinking and political participation is more more highly developed in educational and political literature. In developing a competency - based approach to the promotion of students' political competencies, Gillespie and Patrick (1974) identify 4 sets of political competencies necessary for acting in effective participant roles. One competency is basic intellectual skills, and these skills are critical thinking skills (p. 22). Newmann, et. al., (1977) also indicate the crucial nature of critical thinking for efffective citizenship. Patrick

(1977) and Cleary (1971) both emphasize the positive effects of teaching students skills in using knowledge to make decisions and solve problems involving political participation. Freire (1974) and Weissberg (1974) both espouse educatiion for citizen participation that focuses on analytical thinking and the ability to conceptualize, organize, and evaluate political phenomena. Descriptions of rational activists also imply the need for critical thinking. Simpson's (1971) statements exemplify this assumption.

> According to the norms of democratic ideology, the personality model to be found in the successful democracy is that of the rational activist. The successful democratic system requires that many citizens be involved, active in politics, and influential. Decision-making, especially of actual voting decisions, must be done on the basis of careful evaluation of evidence and weighing of alternatives. Activity, involvement, and rationality define the role of citizenship; emphasis is on aspects of participant behavior rather than a passive, subject behavior on the part of the governed (p. 92).

Theoretically, then, critical thinking is linked with political participation. It is not assumed that knowledge of facts and a reliance on authorities for information produce politically active citizens but that political activism requires that a citizen be able to think critically, solve problems, make decisions, accept conflict. Rational participation is not fostered by factual knowledge of political institutions and their functions; it is preceded by knowledge of and skills in the processes by which one is able to deal with problems and make decisions. The complexities of the political world and the issues within it render effective participation almost impossible without the intellectual skills needed to comprehend, organize and deal with that world.

It is assumed in this study that the intervening varibales have, like political participation, a basic cognitive component of which critical thinking is an important part. The abilities to support one's beliefs, to organize data in a coherent way, to make generalizations should all make one feel that the world is comprehensible and somewhat predictable. This positive attitude toward the environment would have consequences for the personality. The basis for these assertions is presented below.

Critical Thinking and Personal Control and Political Efficacy

Critical thinking has also been related to personal control. It is critical thinking's contribution to personal control that Siegel (1980) uses as one of three justifications for critical thinking as an educational ideal. Ryckman (1979), after a review of the literature pertaining to locus of control and expectancies, theorizes that cognitive ability is an important factor in personal control. Sniderman (1975) and Lefcourt (1976) find that a sense of powerlessness affects acquistion of knowledge and utilization of information. Assuming, as does this study, that political efficacy is a belief that one has personal control over the political sphere, the support for a link between critical thinking and personal control is also valid for positing a relationship between critical thinking and political efficacy.

The political world is a complex one with numberous and confusing issues; it is easy to see how one might feel baffled and powerless in the face of it. The ability to think critically -- to organize political data, to support hypotheses and knowledge regarding the political world, to make

generalizations about political events -- should engender a sense of control over political outcomes. Instead of a confusing and random series of events, the political world should be more orderly and predictable to the critical thinker. This perspective has not been developed in the literature, but borrowing from the support for a cognitive base for personal control and using the logic presented above, one might expect to find a link between critical thinking and political efficacy.

Critical Thinking and Self-esteem

Sniderman (1975), in the development and assessment of a model depicting the influence of personality on exposure to and comprehension of political events and thus on political learning, finds that

> of the personality characteristics likely to affect the relationship of self-esteem and political learning, perhaps the most important are cognitive abilities and skills. For any group of persons, the degree to which self-esteem inhibits exposure and comprehension depends on the average level and degree of variation in its cognitive ability (p. 130).

Sniderman's theory places self-esteem as the independent variable and cognitive abilities as the dependent variable, and his research does support his hypotheses. His findings, though, do not rule out a reversal of this flow of influence in which cognitive abilities (specifically critical thinking) affect self-esteem. In a causal model, the direction of influence is decided arbitrarily.

Garett and Wulf (1978) find that, for females, measures of ego development and critical thinking are significantly related. Maslow (1954) speaking of preconditions for the satisfaction of basic needs, states:

> If we remember that the cognitive capacties (perceptual, intellectual, learning) are a set of adjustive tools, which have, among other functions, that of satisfaction of our basic needs, then it is clear that any danger to them, any deprivation or blocking of their free use, must also be indirectly threatening to the basic needs themselves (p. 47).

Maslow classifies the need for intellectual mastery and competence as part of the esteem needs and verifies this desire to know and understand through evidence from animal psychology, the history of humankind, studies of psychologically healthy people, studies of late infancy and early childhood, and studies of the psychopathological effects of cognitive frustration. Maslow establishes a firm theoretical basis for cognitive skills as a prerequisite of high self-esteem. It does seem logical that a person who is intellectually capable of dealing with the world would experience a more postive sense of self.

Critical Thinking and Democratic Attitude

A cognitive basis to the development of democractic values is found by diPalma and McClosky (1971). They find that deviants from American norms and values are lower in intellectual performance and cognitive skills and that they fail to realize that their claims of support for democracy are not consistent with their attitudes. Those who conform to democratic principles are "more intellectually oriented, more politically aware, and more proficient

in their cognitive skills" (p. 294). Sniderman (1975) asserts that the norms implicit in the democratic creed are complex, variable, and abstract, and that their understanding and application to specific situations "requires a large fund of information, a habit of attentiveness to politics, and skill in judgment and discrimination acquired through practice and experience" (p. 183). He mainitains that education is the main institution for the transmission of the ideal culture and of democratic attitudes, and that this transmission has two aspects.

> As the individual progresses through the educational system, he is brought into direct and increasingly close contact with the values of the official culture. Obviously, education also cultivates the intellectual skills and styles needed to understand the values and to appreciate their relevance to the affairs of everyday life (p. 135).

The strong implication, empirically and theoretically, is that the individual with highly developed cognitive skills such as critical thinking is more likely to comprehend the democratic creed, to detect inconsistencies between personal attitudes and those prevalent in the American creed, and to have these beliefs well-grounded. It would seem that critical thinking ability would be particularly important in one's application of democratic norms to specific situations; many studies show that support for democratic values does not extend beyond a lip-service conformity (McClosky, 1964; Prothro and Grigg, 1960; Weissberg, 1974; Zellman and Sears, 1971). The critical thinker should be better able to detect inconsistencies between claims and applications and to avoid irrational, emotional grounds for actions and reactions in given situations.

Self-esteem

Maslow (1954) links self-esteem and personal control by making personal control a dimension of self-esteem. He describes the need for self-esteem in two ways:

> First, the desire for strength, for achievement, for adequacy, for mastery and competence, for confidence in the face of the world, and for independence and freedom. Second, the desire for reputation and/or prestige, status, dominance, recognition, attention, importance, application (p. 20).

If self-esteem and personal control are different factors of one general attitude, then one could expect high self-esteem to have a positive effect on personal control.

Knutson (1972) finds a significant relationship between a need for self-esteem and lack of efficacy, thus suggesting that high self-esteem leads to political efficacy. Lane (1981, p. 21) concludes from many studies that "A sense of personal unworthiness and especially a sense of interpersonal incompetence is associated with ... low motivation to be effective" (p. 213). Thus, he suggests that both self-esteem and personal control are antecedents to political efficacy.

Self-esteem is also viewed as a factor that contributes to the democratic personality. Sniderman (1975) and Di Palma & McClosky (1971) find that those low in self-esteem are less likely to support democratic norms and values, whereas the person high in self-esteem is more likely to support procedural rights, has more tolerance, and has more faith in democracy. Knutson (1972), in a study to determine the relationship between human needs and political attitudes and behavior, concludes that the frustration of basic needs such as self esteem produes a wide "variety of undemocratic attitudes and behaivor, while their fulfillment provides the minimal condition for contributory citizenship" (p. 276). The research of Frankel-Brunswick et. al., (1974) supports the notion that self-esteem is central to the democratic personality.

The relationship between self-esteem and political participation is fairly well documented. As Milbrath and Goel (1977) state, "In general, the conclusion of many studies is that persons with a sense of confidence are more likely to assume political activist roles," (p. 78). The findings of Sniderman (1975), Smith (1968), Milbrath and Klein (1974), and Barber (1965) all indicate that a relationship between self-esteem and political participation exists.

Personal Control

Political efficacy is considered the political aspect of personal control. Thus, high personal control should lead to high political efficacy. Renshon (1974) defines political efficacy as the belief that one has sufficient personal control over political processes to satisfy the need for control in relevant life areas. He states that "high political efficacy as a belief is logically preceded by ... a need for personal control" (p. 80) and his research supports the relationship. As stated above, Lane's (1981) review of the literature uncovers a recurring relationship between personal control and political efficacy.

Renshon (1979) contrues personal control as a foundation for assumptive beliefs that influence the development (or retardation) of a basically democratic personality and finds that individuals with low personal control are more likely to view unconventional methods of political participation as the most efficacious type of political behavior and to accept violence as a legitimate activity, thus suggesting that low personal control engenders less acceptance of democratic procedures. Other writers similarly assume the centrality of personal control in the democratic personality. Simpson (1971) asserts that the nature of the true democrat is such that "he believes he can, at least in some measure, control his universe" (p. 92). Allport (1960) assumes that "unless we try deliberately and persistently to affect our destinies ... we are not democratic personalities" (p. 194).

The link between personal control and political participation is well-grounded. Knutson (1973), after a review of the literature, states that "a multitude of studies ... have demonstrated that there is a relationship between an inner feeling of potency and the degree of political acturity i which one engages," (p. 45). Gore and Rotter (1963), Rosen & Salling (1971), Gergen and Ullman (1977), Thomas (1970), and Simpson (1971) all cite evidence that relates antonomy to political activism.

Political Efficacy

A relationship between political efficacy and democratic attitude has been found. Janowitz and Marvick (1953) conclude that "authoritarianism is significantly and directly related to feelings of political ineffectiveness" (p. 199). Agger et. al., (1961) find a positive relationship between feelings of political impotency and political cynicism (lack of trust in the democratic system). Ransford (1974) finds a strong relationship between powerlessness and violent pp..

Langton (1969) states that research overwhelmingly attests to the link between political efficacy and political participation. The research of Jennings and Niemi (1974) supports that relationship. The relationship between the two variables is generally accepted in the political socialization literature, as evidenced by the following statement (Milbrath and Geel, 1977).

> The relationship between feelings of efficacy and conventional political participation is among the most widely documented ones. It has been found over and over that persons who feel efficacious participate at a higher level than those who lack such feelings (p. 58).

The work of Campbell et. al, (1974) and Verba & Nie (1973) are examples of the large number of studies that have substantiated the relationship.

Democratic Attitude and Political Parcipation

Support for the relationship between democratic attitude and political participation is, for the most part, indirect. The political elite and those with higher educational and economic backgrounds are more likely to support specific applications of democratic norms and values (Prothro and Grigg, 1960). Individuals from higher socioeconomic levels are also the most participatory citizens (Berelson et. al., 1954; Campbell et. al., 1964; Verba and Nie, 1972). These findings suggest that people with democratic attitudes are more likely to participate. Milbrath and Klein (1974) find that authoritarian attitudes are negatively related to political participation, and Janowitz and Marvick (1953) support that finding. Lane (1955) finds that authoritarians are less likely than equalitarians to engage in campaign activity. Knutson (1972) states that research strongly indicates "that apathetics (those who do not participate politically) are likely to have a highly undemocratic view of the world," (p. 260).

Methodology

The model was assessed by statistical analysis. Data relating to each of the variables in the model were collected, and the data were subjected to path analysis.

The data were collected form 118 undergraduate and graduate students. Since this study is more concerned with "theory-building" than with

generalizations about a given population, no attempt to randomize was made. Demographic data were collected to establish that the subjects are a relatively normal group.

Critical thinking measured by the Watson-Geiser Critical Thinking Appraisal (Watson & Glaser, 1980). The Critical Thinking Appraisal is divided into five subtests intended to measure skills in inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. In split-half reliability tests, the CTA yielded reliability coefficients (r) ranging from .69 to .85. Correlation between responses to test administered with three months between testing periods is .73. Levenson's Internal, Powerful Others, and Chance Scales were used to measure personal control (Levenson & Miller, 1976) Cronbach's alphas of .77 for the Internal Scale, .71 for the Powerful Others Scale, and .73 for the Chance Scale are reported. A scale developed by Stentz & Lambert (1977) was used to measure political efficacy. The scale was developed by Stertz & Lambert after extensive research regarding the reliability and validity of traditional political efficacy items. The self-esteem items in the instrument used are those developed by Knutson (1977, p. 123) to measure satisfaction of self-esteem needs based on Maslow's hieracrchy of needs. No tests of reliability or validity are reported. Items to tap support for democratic norms and values are from studies done by McClosky and Prothero and Grigg as reported by Robinson (1969). No tests of reliability or validity are reported for the Prothro and Grigg items. McClosky reports no reliability tests but reports that the scale items have been independently validated by empirical validation procedures employing appropriate criteria groups or by a modified Guttman reproducability procedure supplemented, in some instances, by a face validity procedure utilizing item rating by experts. The political participation scale was developed by the author and is based on Milbrath and Goels's (1977, pp. 18-19) breakdown of the activities involved in different modes of participation. The scale attempts to tap two different dimensions of each single activity: (1) the subject's general attitude toward that particular form of participation, and (2) the subject's projected participation in that activity. The personal control, political efficacy, self-esteem, democratic attitude, and political participation items were included in a survey form which utilizes a Likert-type scale. A copy of this instrument is found in Appendix A. The scale items were validated using item rating by experts. Actual political participation was measured by a checklist which also reflects Milbrath and Goel's modes of participation. A copy of the checklist is found in Appendix B.

Path analysis is a statistical technique that provides a method of demonstrating influence of one variable on another; influence is defined as an alteration in B caused by changes in A (Simon, 1957). The unique quality of path analysis is that it allows causal interpretation to be made based on a theoretical framework that supports the positing of asymmetrical relationships. Land (1969) identifies three primary sources of information from which causal assumption may be derived: time order, existing experimental or case-study results, and the theoretical assumptions of the particular substantive area under investigation. It is the last two sources that are the basis for the model used in this study. The experimental and theoretical evidence does not firmly establish a causal relationship between and among variables. Barring evidence to the contrary, though, a

methodological assumption is made that the causal relationships posited by the model exist. The data do not contain measures based on changes in time, because they are obtained from one sample at one point in time. Changes in dependent variables are inferred from a statistic (the path coefficient) that represents the effect of one variable on another.

Duncan (1966) shows that, under certain assumptions, path analysis is the same as regression analysis performed on a recursive set of simultaneous equations and that the path coefficients are the same as the beta coefficients (standardized regression coefficients). The equations are analagous to normal equations for solving for the slope b in regression theory. Land (1969) shows how path coefficients are deduced from knowledge of correlation coefficients. He also states three contributions of path analysis to the interpretation of causal systems.

1. It provides a convenient and logically sound interpretation of the coeffiecient of alienation as the path coefficient of the residual term in the structural equation ... The residual path coefficient, then, represents the proportion of the standard deviation, and its square represents the proportion of the variance, of the endogenous variable that is caused by all (unmeasured) variables outside of the set under consideration in the path model (p. 12).

2. It provides an interpretation of the correlation of an exogenous and an endogenous variable as a sum of direct and indirect effects (p. 15).

3. It provides a general procedure for exploring the indirect effects of a determining variable on a dependent variable in a multivariate path model (p. 16).

The path diagram employed in this study is shown in Figure 2. According to conventions for constructing path diagrams, one-way arrows are used leading from each determining variable to each variable dependent on it. Unanalyzed correlations between variables are shown by two-headed, curved arrows (Duncan, 1969). A literal subscript is attached to the residuals (R_a, R_b, R_c, R_d, R_e, R_f,') to indicate that these variables are not directly measured. The subscript p represents the path coefficient. The system depicted by Figure 2 is represented by the following equations.

$$X_2 = P_{21}X_1 + P_{2b}R_b \quad (1)$$

$$X_3 = P_{31}X_1 + P_{32}X_2 + P_{3c}R_c \quad (2)$$

$$X_4 = P_{41}X_1 + P_{42}X_2 + P_{43}X_3 + P_{4d}R_d \quad (3)$$

$$X_5 = P_{51}X_1 + P_{52}X_2 + P_{53}X_3 + P_{54}X_4 + P_{5e}R_e \quad (4)$$

$$X_5 = P_{61}X_1 + P_{62}X_2 + P_{63}X_3 + P_{64}X_4 + P_{65}X_5 + P_{6f}R_F \quad (5)$$

Solution for P_{21}, P_{31}, P_{41}, P_{51}, P_{52}, P_{53}, P_{54}, P_{61}, P_{62}, P_{63}, P_{64}, and P_{65} are obtained by multiple regresson of each dependent variable, X_2, X_3, X_4, X_5, or X_6, on its respective independent variables as shown in Equations 1, 2, 3, 4, and 5. The path coefficients are the standardized regression coefficients or Betas in the regression solution. Solutions for the residual paths $P_{2b}R_b$, $P_{3c}R_c$, $P_{4d}R_d$, $P_{5e}R_e$, and $P_{6f}R_f$ are found by taking the square root of the value $1 - R^2$, R^2 being the multiple correlation coefficient squared (Fowlkes, 1974).

An analysis of the compound paths in the model employed by the study allows the decomposition of variables X_2, X_3, and X_4 into effects of critical thinking and effects of each other, and effects of all other unmeasured variables. Variables X_5 and X_6 are decomposed into the direct effects of any one of the variables preceding it in the path diagram and indirect effects of one variable through another variable. For example, the direct effect of critical thinking on democratic attitude is measured by P_{51} and the indirect effect of critical thinking through political efficacy can also be measured by obtaining the product of the two paths involved (P_{41}, P_{54}) (Land, 1969). The correlation between any two variables in the path diagram is equal to the sum of the direct and/or indirect paths. The total indirect effect of any one variable on another variable can be determined from the formula:[159]

Total Indirect Effect (TIE) of Z_i on $Z_1 = r_{1i} - P_{1i}$ (Land, 1969).

For example, the TIE of personal control on political participation = $r_{63} - P_{63}$. The endogenous variables in the path diagram are considered to be determined partially by the exogenous variables preceding them in the diagram and partially by the aggregate effects of other variables not explicitly considered (Heise, 1969); thus, P_{2b}, P_{3c}, P_{4d}, P_{5e}, and P_{6f} will have values of 1.1. The exogenous variable (critical thinking) is considered to be totally a function of its implicit residual (Heise, 1969); thus, $P_{1a} = 1$.

After the path coefficients have been attained, the accuracy of the model is analyzed. Since path coefficients are rarely zero, the question arises as to what is a "small" or "insignificant" path coefficient. Land (1969) states:

> For path models of this type, there are no conditions imposed on the model that can be used to evaluate its accuracy. Rather, any decision to delete a postulated path must be based on a statistical test of significance or an arbitrary criterion of size of the retained paths (p. 34).

Heise (1969) agrees and delineates the problems associated with each method.

> There are no objective standards or even established conventions to guide one in making such a decision. One can only say that to be treated as zero, a path coefficient must be minute in absolute value, and when the model parameters are reestimated deleting the apparently nonexistent path, the new model should reproduce the empirical correlation matrix with very little error. Testing the statistical significance of a path coefficient may not be a desirable procedure for determining whether it

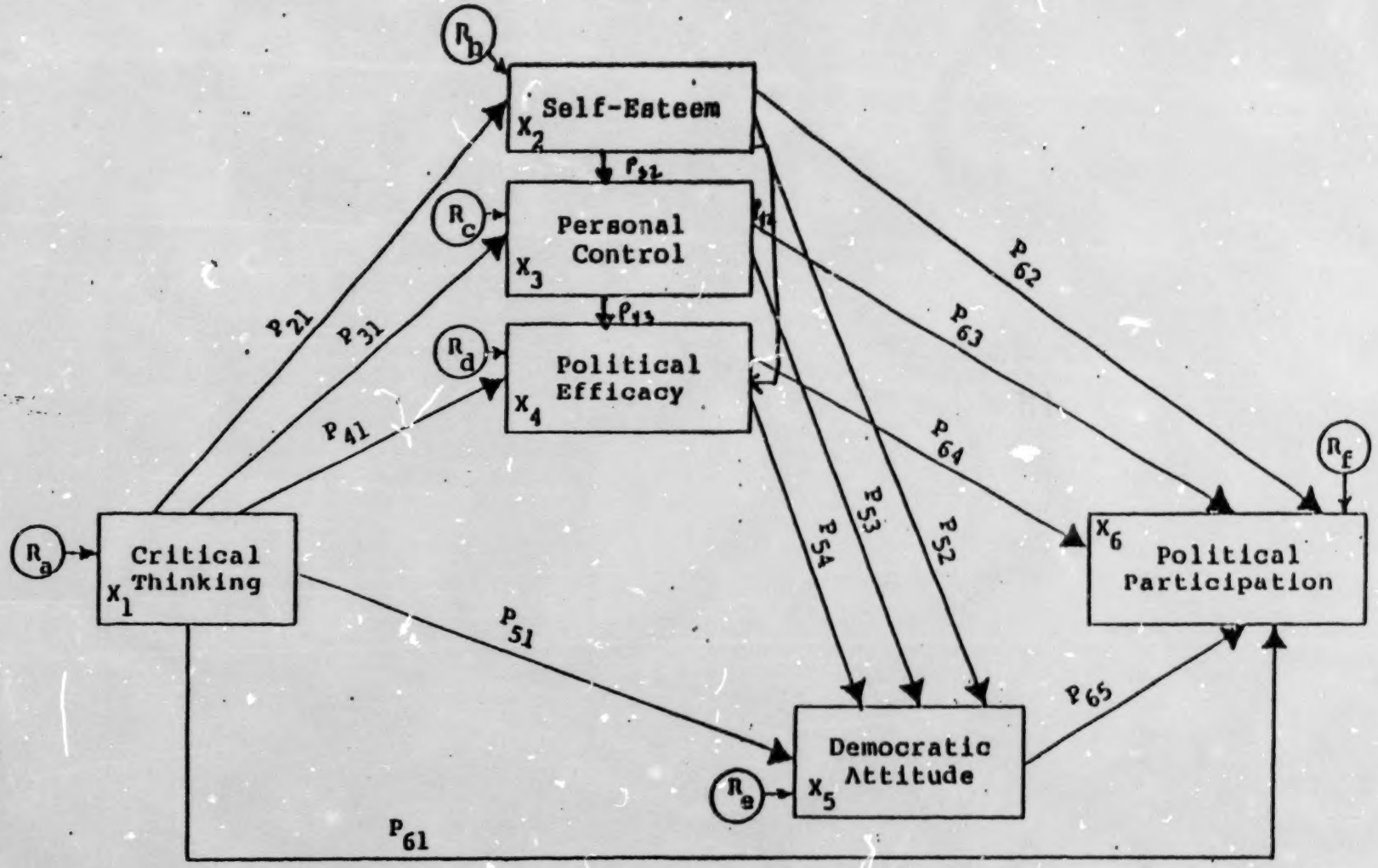


Fig. 2. Path diagram employed in the present study.

is near zero. If samples are small, the excessively large values of path coefficients might be treated as negligible; if samples are quite large (as they should be for these types of analyses), then a path coefficient which could be considered negligible in an absolute sense might be found to be statistically (p. 61).

Significance is more likely to be attained for relatively small path coefficients when the sample size is large. This study includes data from 118 subjects. Due to the relatively small sample size, an .05 level of significance was used. a more rigorous standard was not chosen, also, because the model depicts interrelationships that have not previously been tested empirically, and it seems important to avoid Type II error at this stage of the investigation.

Findings and Discussion

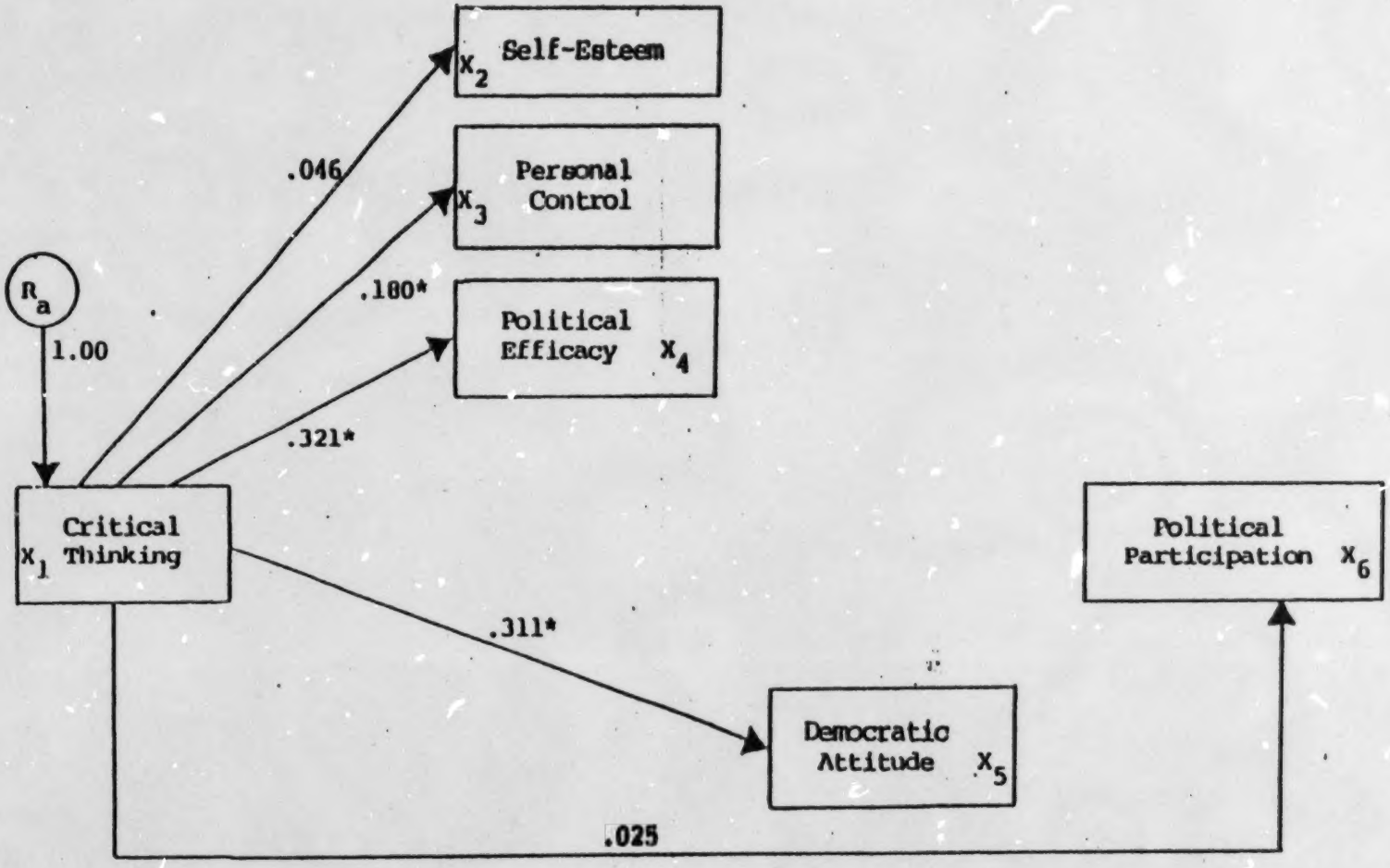
The path diagram shown in Figure 3 displays the direct effect of critical thinking on self-esteem, personal control, political efficacy, democratic attitude, and political participation. The path analysis is based on the correlation matrix in Table 1.

TABLE I

ZERO-ORDER CORRELATION MATRIX: CRITICAL THINKING, SELF-ESTEEM, PERSONAL CONTROL, POLITICAL EFFICACY, DEMOCRATIC ATTITUDE, AND POLITICAL PARTICIPATION

Scale	1	2	3	4	5	6
1. Critical thinking						
2. Self-esteem	.044					
3. Personal Control	.205*	.592**				
4. Political Efficacy	.418**	.499**	.628**			
5. Democratic Attitude	.423**	.214*	.319**	.425**		
6. Political Participation	.366**	.222*	.306**		.624**	.487**

*Product-moment correlation coefficients significant at the .05 level.
**Product-moment correlation coefficients significant at the .01 level.



*Path coefficients significant at the .05 level.

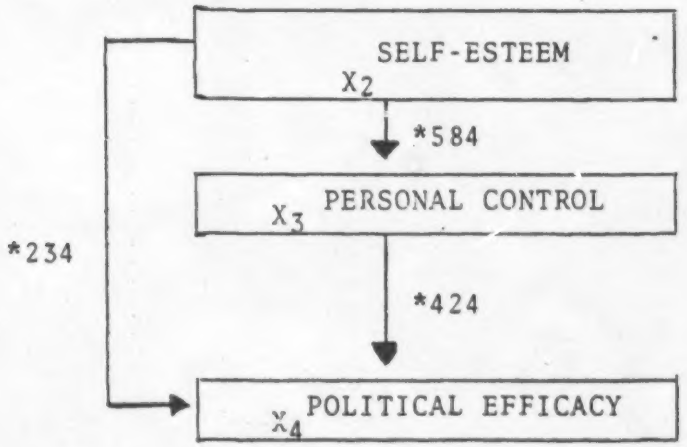
Figure 3. Path diagram showing the direct effects of critical thinking.

Critical thinking does not have a significant effect on self-esteem (p = .046); thus, the analysis does not support the hypothesis that critical thinking has a positive and direct effect. Critical thinking has a positive and direct effect on personal control (p = .180) and on political efficacy (p = .321). The direct effect on political efficacy is over one-and-one-half times greater than the direct effect on personal control. Critical thinking has a significant direct effect on democratic attitude (p = .311) of about the same magnitude as the direct effect on political efficacy. Critical thinking does not have a significant direct effect on political participation (p = .025); thus, the hypothesis that critical thinking has a positive and direct effect on political participation is not supported.

Critical thinking does not have a significant relationship with (r = .044) or a significant direct effect on self-esteem. This lack of relationship might partially be explained by restricted variability. The greater the variability among observations, the greater the value of r (Hopkins and Glass, 1978). The variance of self-esteem is 31.86, as compared to 68.4 for political efficacy, 91.34 for personal control, and 45.62 for democratic attitude. The nature of the sample used in the study may be responsible for this phenomenon. College and graduate students may be particulary high in self-esteem due to such factors as being in college and successes in school. It also may be that self-esteem has more emotional than cognitive components. Critical thinking skills may not be applied directly to one's evaluation of the self. A person may be a critical thinker yet not think critically when assessing self-worth. The direct effect of critical thinking increases as the nature of the variable becomes less personally oriented. One may be able to assess the political world more objectively and abstractly, thus allowing critical thinking skills to be employed. Subjectivity and emotion are more likely to influence one's feelings of personal control. Nothing is more personal or more dependent on a singular point of view than self-esteem, and it may be that self-esteem is determined more affectively than cognitively. Influences such as family interaction patterns, mental health, and life experiences may be more important to self-esteem and a sense of personal control than are cognitive skills and abilities. This analysis does not support Sniderman's (1975) theory that places self-esteem as the independent variable and cognitive abilities as the dependent variable, because a significant relationship is not found for the two variables.

Critical thinking does have a significant relationship with political participation (r = .366), but path analysis does not show a significant direct effect. This phenomenon has two basic outcomes: (1) it supports the theories presented in Chapter II as to a relationship between critical thinking and political participation; and (2) it leads to the question of how critical thinking does affect political participation, if not directly. It is this question that is of ultimate concern in this study and which will be answered by further analysis of the model.

The path diagram in Figure 4 displays the direct effect of self-esteem on personal control and political efficacy and the direct effect of personal control on political efficacy. The path analysis is based on the correlation



*Path coefficience significant at .05 level.

Figure 4. Path diagram showing of the direct effects of self-esteem on personal control and political efficacy and of personal control on political efficacy.

matrix in Table 1. Self-esteem has a significant direct effect on personal control (p = .584) and on political efficacy (p = .424). It seems that an individual with high self-esteem is more likely to have a sense of personal control and to feel politically efficacious and that feelings of control in the one's personal life indicate that one will feel more powerful in the political sphere.

The path diagram shown in Figure 5 displays the direct effect of critical thinking, self-esteem, personal control, and political efficacy on democratic attitude. The path analysis is based on the correlation matrix in Table 1.

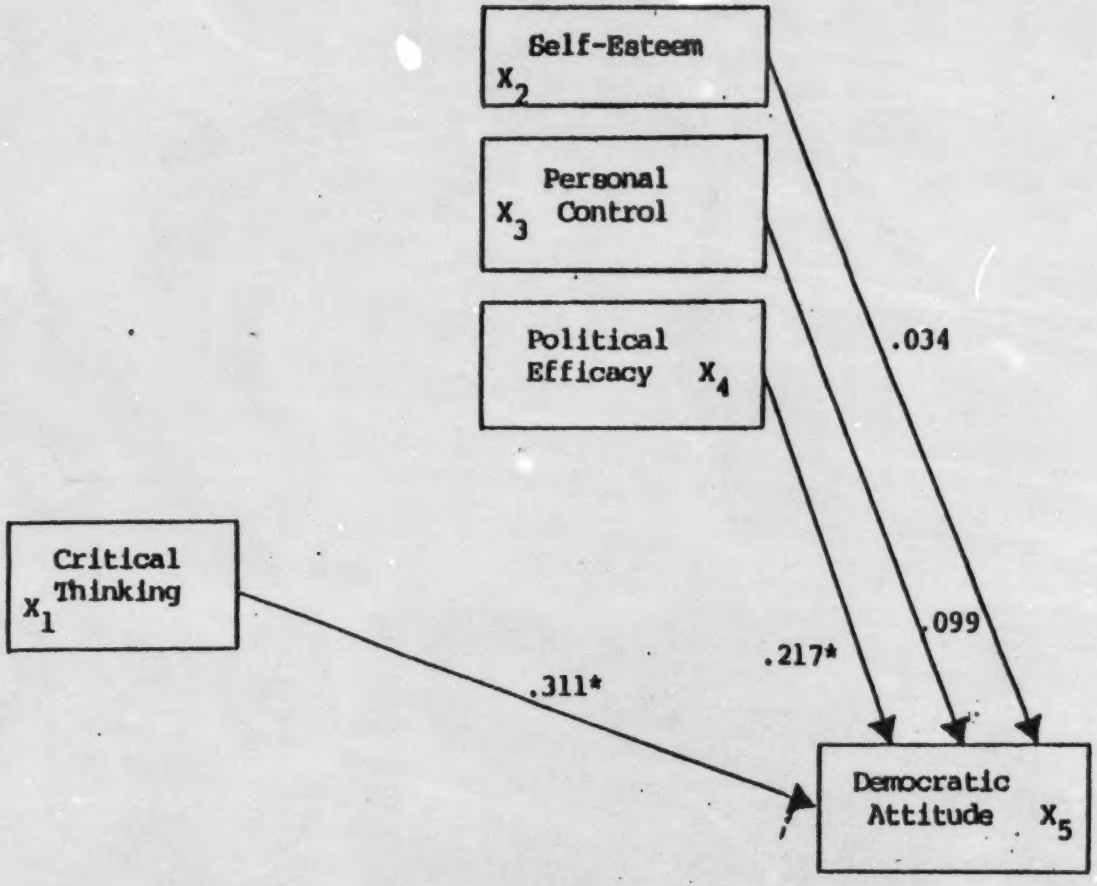
As mentioned above, critical thinking has a significant direct effect on democratic attitude (p = .311). Self-esteem does not have a significant direct effect on democratic attitude (p = .034), nor does personal control (p = .099). Political efficacy does have a significant direct effect on democratic attitude (p = .217), and its effect is more than twice as great as that of personal control and over six times greater than the direct effect of self-esteem.

The ability to think critically positively affects democratic attitude. It does seem that understanding of and application of democratic norms and values is dependent upon certain cognitive abilities. Self-esteem and personal control do not have a significant direct effect on democratic attitude, and the direct effect of political efficacy is enough greater to warrant some discussion of the differential effects. The larger effect of political efficacy may be due to the fact that political efficacy and democratic attitude are both political variables, whereas self-esteem and personal control are not, thus creating a greater likelihood of a relationship between the two attitudes. It could be, too, that the feeling that one can affect political outcomes engenders more positive feelings toward the democratic values and processes that are an integral part of the American political milieu. If one feels more powerful within a certain context, then one is more likely to accept the norms relevant to the context. Self-esteem, personal control, and political efficacy each have a significant relationship with democratic attitude (r = .214, .319, and .425, respectively), thus indicating that all three variables exert some influence on democratic attitude indirectly. It is not within the scope of this study to attempt to ascertain those mediators that may influence these relationships.

The path diagram shown in Figure 6 displays the direct effect of critical thinking, self-esteem, personal control, political efficacy, and democratic attitude on political participation. The path analysis is based on the correlation matrix in Table 1.

As stated above, critical thinking does not have a significant direct effect on political participation (p = .025). Self-esteem does not have a significant direct effect on political participation (p = .614), as does democratic attitude (p = .272). The direct effect of political efficacy is larger by a factor of 2.25 than the direct effect of democratic attitude.

It is the political variables that exert a direct effect on political participation, and it is not surprising to find that a variable has a greater direct effect on another variable of like nature. Yet, the nonpolitical variables, critical thinking, self-esteem, and personal control, each do have a significant relationship with political participation (r = .366, r = .222,



*Path coefficients significant at the .05 level.

Figure 5. Path diagram showing the direct effect of critical thinking, self-esteem, personal control, and political efficacy on democratic attitude.

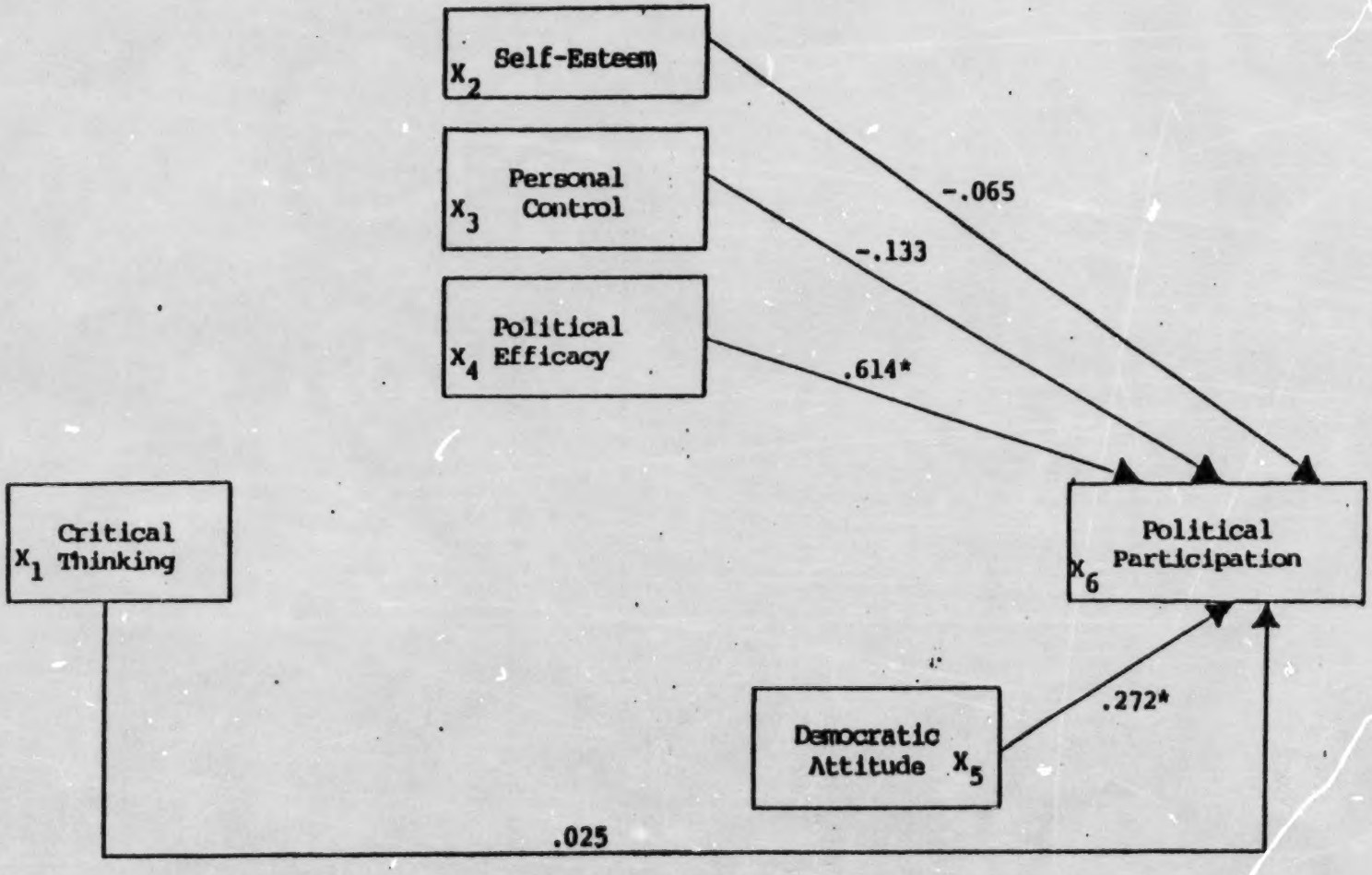
and $r = .306$, respectively). The indirect effects of critical thinking are the focus of this study. Apparently, self-esteem and personal control also indirectly affect political participation. The lack of direct effect on self-esteem by critical thinking shown in Figure 3 and discussed previously indicates that self-esteem is an exogeneous variable rather than an endogeneous variable influenced by critical thinking. The path diagram in Figure 3 shows that critical thinking has a significant, if small, direct effect on personal control. The lack of a significant direct effect of personal control on democratic attitude or on political participation indicates that other variables than those brought into this model mediate the effects of personal control on political participation.

The path diagram in Figure 7 displays the direct effect of critical thinking on political participation and the indirect effects of critical thinking on political participation through self-esteem, personal control, political efficacy, and democratic attitude. The path analysis is based on the correlation matrix in Table 1. The direct and indirect effects of critical thinking on political participation are compared in Table 2.

TABLE 2
COMPARISON OF THE DIRECT EFFECT OF CRITICAL THINKING AND THE INDIRECT EFFECTS THROUGH SELF-ESTEEM, PERSONAL CONTROL, POLITICAL EFFICACY, AND DEMOCRATIC ATTITUDE ON POLITICAL PARTICIPATION

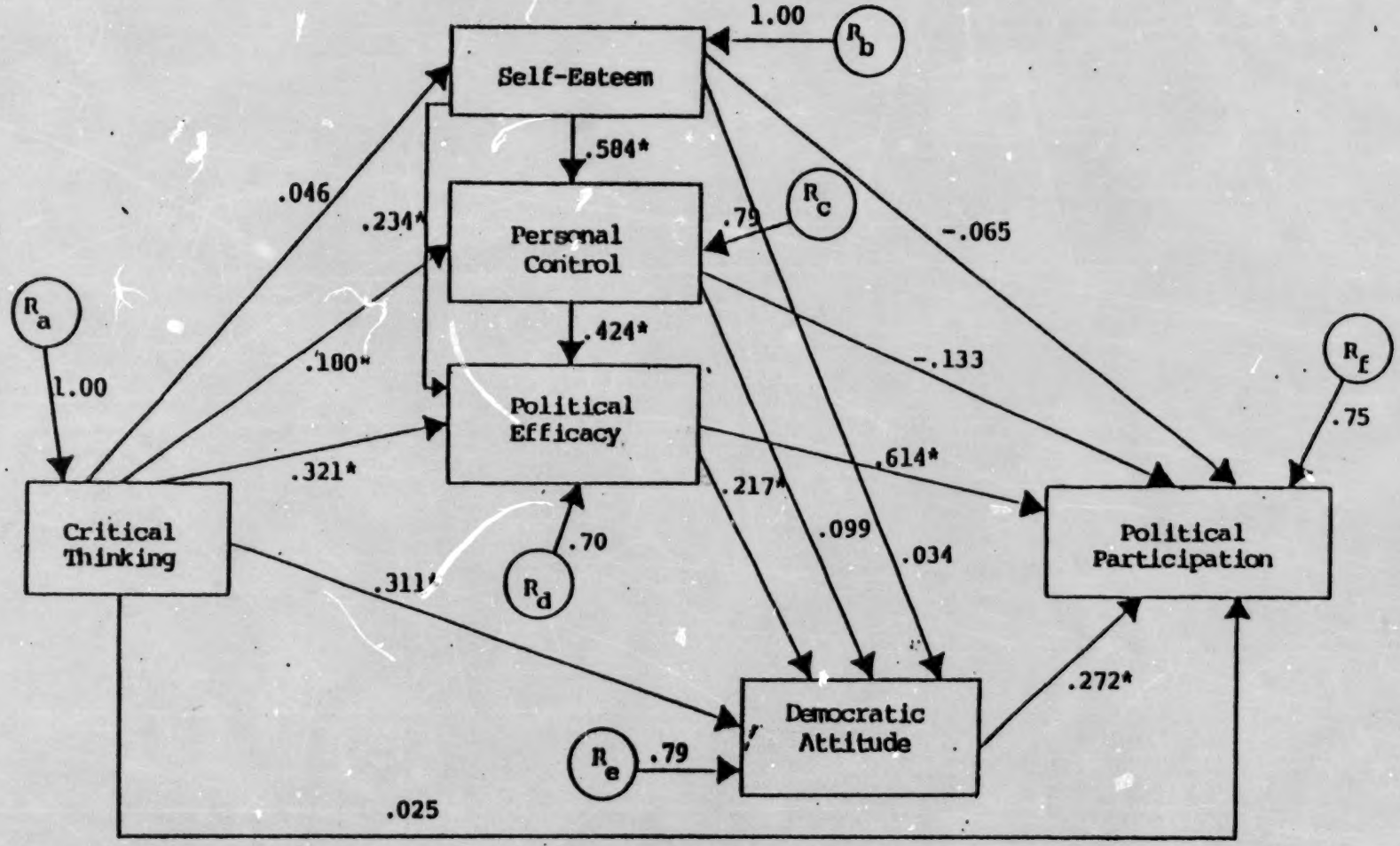
Direct Effect	Total Indirect Effects	Influence Through Variables	Variable
.025	.341	-.003	Self-Esteem (SE)
		.024	Personal Control (PC)
		.197	Political Efficacy (PE)
		.007	SE, PC, and PE
		.047	PC and PE
		.085	Democratic Attitude (DA)
		.0004	SE and DA
		.005	PC and DA
		.019	PE and DA
		.0007	SE, PC, PE, and DA
		.005	PC, PE, and DA

*The direct effect is not significant at the .05 level of significance. Significance of indirect effects cannot be determined since they are products of direct paths.



*Path coefficients significant at the .05 level.

Figure 6. Path diagram showing the direct effects of critical thinking, self-esteem, personal control, political efficacy, and democratic attitude on political participation.



*Path coefficients significant at .05 level.

Figure 7. Path diagram showing the direct effect of critical thinking and the indirect effects of critical thinking through self-esteem, personal control, political efficacy, and democratic attitude on political participation.

The influence of unspecified variables not in the model on political participation is represented by the residual term, R_f, which is .75. Thus, the model explains 25 percent of the variance of political participation, and 75 percent of the variance is due to sources without the model. How do the variables in the model affect political participation? Critical thinking does not have a significant direct effect on political participation ($p = .025$). The total indirect effects of critical thinking on political participation are .341, greater by a factor of almost fourteen than the direct effect. Thus, it becomes clear that intervening variables are mediating the effect of critical thinking on political participation in a positive direction. Which variables are important to the relationship? Table 2 shows that the indirect effect of critical thinking through political efficacy (.197) accounts for over one-half of of the total indirect effects of critical thinking on political participation. The indirect effect of critical thinking through democratic attitude (.085) accounts for 25 percent of the total indirect effects. The indirect effect of critical thinking on political participation through both political efficacy and democratic attitude accounts for 6 percent of the total indirect effects, but this indirect effect is less than the direct effect of critical thinking on political participation. The indirect effect of critical thinking through personal control and political efficacy is .047, thus accounting for over 7 percent of the total indirect effects. Thus, it is personal control, political efficacy, and democratic attitude that are the variables brought into the model that most positively influence the relationship between critical thinking and political participation. Self-esteem or any other combination of the variables has only aninfinitesimal indirect effect on te relationship. The one exception is the indirect effect of critical thinking through personal control, which is a negative indirect effect of -.024.

Critical thinking has a significant relationship with political participation ($r = .366$). For the model employed in this study, the indirect effects of critical thinking on political participation are much greater than the direct effect. The pattern and direction of those indirect effects will be discussed in the next section. This discussion will focus on those variables for which the analysis does not support hypotheses concerning their indirect effects on the relationship between critical thinking and political participation.

Possible explanations for the lack of influence of critical thinking on self-esteem have already been presented. The negative, though insignificant, direct effect of self-esteem on political participation suggests that people might participate in order to gain self-esteem, as Lane (1972) and others have indicated.

Critical thinking has a significant, but small, direct effect on personal control. It seems that cognitive skills do influence one's feeling that one can affect those forces that are salient to one's life. As stated previously, Sniderman (1975) and Lefcourt (1976) posit a different direction of influence; this research supports the notion that critical thinking is an antecedent of personal control. Personal control has a negative and almost significant direct effect on political participation. This finding supports Renshon's (1974) view of the relationship between personal control and political participation. He hypothesized, and his research empirically verifies, that

people participate politically in order to gain more control over salient spheres. He finds that those lower in personal control participate more, the same inverse relationship shown by the direct effect of personal control on political participation.

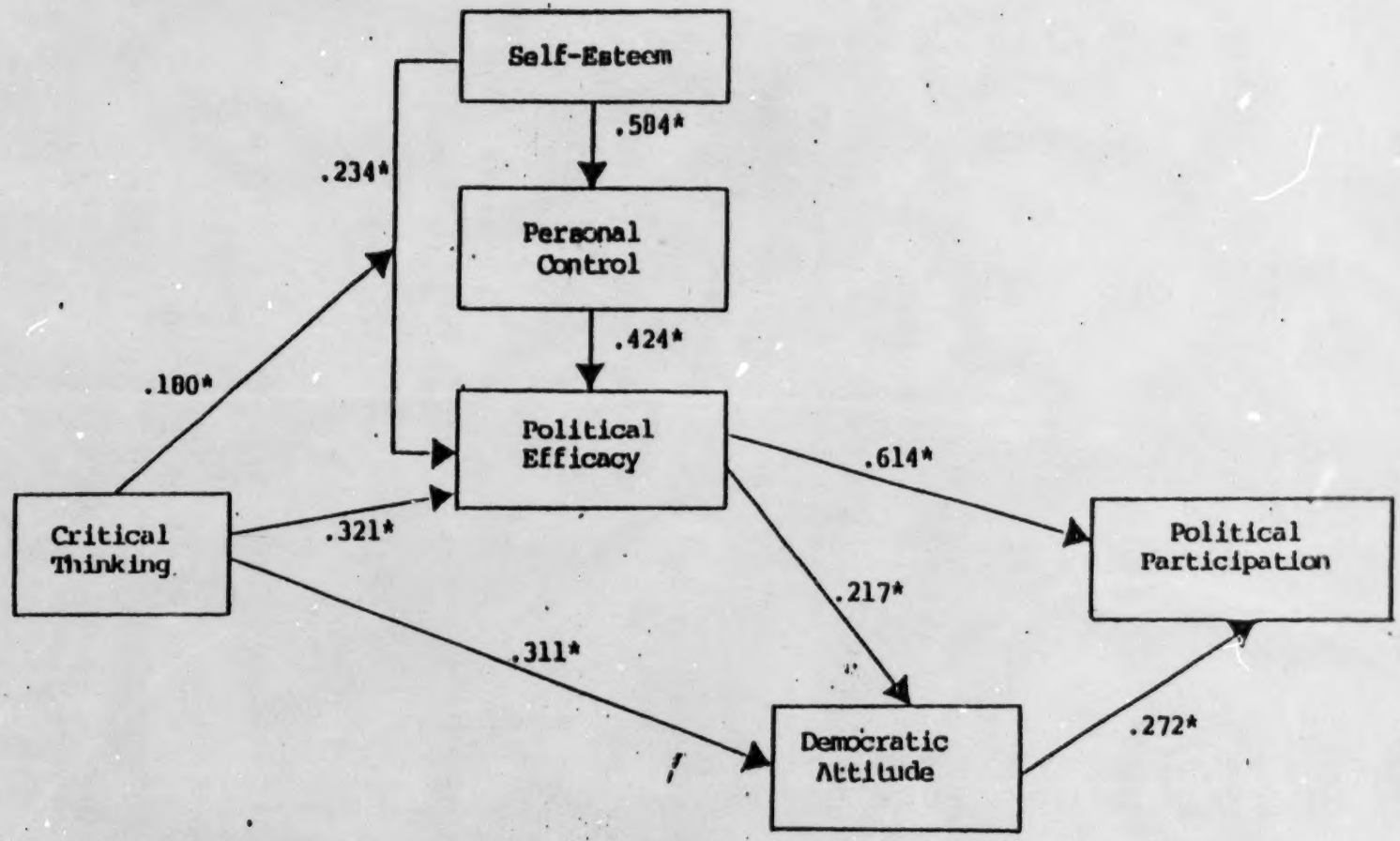
Conclusions

The path diagram in Figure 8 displays that part of the original model that path analysis demonstrates to be the best representation of direct and indirect effects of critical thinking that account for the relationship between critical thinking and political participation. The path analysis is based on the correlation matrix in Table 1. Following is an explication of how critical thinking affects political participation.

As shown in Table 1, critical thinking has a significant relationship with political participation (r = .366). Critical thinking does not have a significant direct effect on political participation, but, as shown in Table 2, the total indirect effects are .341, more than thirteen times greater than the direct effect. What, then, are the sources of these indirect effects? The path diagram in Figure 7 shows that political efficacy and democratic attitude are important mediators in the relationship between critical thinking and political participation. Critical thinking affects political efficacy, which in turn has a very strong direct effect on political participation. The influences of the other two variables in the model, self-esteem and personal control, are much more indirect. Self-esteem contributes directly and indirectly through personal control to political efficacy. Critical thinking has a small but significant direct effect on personal control which in turn strongly influences political efficacy. Self-esteem is retained in the model only to show its influence on polticial efficacy and not as a mediator in the relationship between critical thinking and political participation. Personal control is an intervening variable, mainly due to its strong direct effect on political efficacy which is such a powerful mediating factor. Personal control is shown to have a cognitive basis, while self-esteem is not, but personal control does not directly affect political participation.

The nature of the indirect relationship between critical thinking and political participation as depicted in Figure 7 can be stated thusly: critical thinking skills influence the development of feelings of political efficacy. Feelings of self-esteem and personal control also contribute to political efficacy, and critical thinking skills enhance fellings of personal control. Those who feel politically efficacious are much more likely to participate politically. Critical thinking abilities also promote the development of a democratic attitude, and a democratic attitude increases the likelihood of political participation.

The path diagram shown in Figure 7 raises some questions about the strength of the relationships. As shown in Table 2, the indirect effects of critical thinking through political efficacy are almost eight times greater than the direct effect of critical thinking and account for over one-half of the total indirect effects. The indirect effects of critical thinking through personal control and political efficacy and through political efficacy and democratic attitude are another 20 percent of the total indirect effects,



*Path coefficients significant at .05 level.

Figure 8. Final path diagram showing the indirect effects of critical thinking through personal control, political efficacy, and democratic attitude on political participation.

thus, political efficacy is shown to be the most important intervening variable of the four brought into the original model. It is not surprising to find that, of the three intervening variables in the second phase of the model, political efficacy has the greatest influence on political participation. The relationship is a fairly well established one, and political efficacy and political participation are both political variables whie self-esteem and personal control are not. The same is true for the much stronger direct effect of political efficacy on democratic attitude; both are political variables. The particularly interesting aspect of the paths connecting critical thinking and political participation through political efficacy and a combination of political efficacy with other variables is the effect of critical thinking on political efficacy. Why does critical thinking affect self-esteem almost not at all and affect political efficacy almost twice as much as personal control? This phenomenon cannot be explained by the like nature of the variables, because the critical thinking skills measured were general skills and not political thinking capabilities. It may be that emotional components are more important to self-esteem and personal control. Both variables may have cognitive components as hypothesized (and this analysis does support a cognitive basis to personal control), but the skills tapped by the Critical Thinking Appraisal may not be the crucial ones, and affective rather than cognitive factors may be more influential. Political efficacy, the feeling that one can have an effect on the political world, does most clearly require cognitive abilities. To affect political outcomes consistenly and effectively, one must be able to organize political data, to support hypotheses and knowledge regarding the political world, and to make generalizations about political events. If one has general critical thinking abilities, it is likely one can apply them to political phenomena and thus feel more politically efficacious.

The same general arguments are true for personal control, but personal control encompasses an attitude about a much larger and much less defined sphere of interest. One who is adept at critical thinking may be able to use past experiences, organize information, solve problems better and thus feel more in control over critical aspects of one's life. Yet, the application of critical thinking to personal areas may be obstructed by the subjectivity and emotion inherent in the issues, or the issues may be less amenable to critical thinking skills. As for self-esteem, it is posible for a person to assess self-worth without ever applying critical thinking skills. A person may be a critical thinker but if critical thinking abilities are not used in determining self-esteem, then the two variables would have little relationship; critical thinking and self-esteem may operate as two separate spheres. By comparison, political phenomena almost demand the operation of critical thinking skills, thus forging a relationship.

The second question evoked by the path diagram in Figure 7 is why critical thinking does not have a direct effect on political participation as hypothesized. A positive relationship does exist between the two variablkes. Yet, the ability to think critically does not directly affect political participation. Much of the support for the positive effect of critical thinking on political participation presented above is theoretical, and this support does not seem inconsistent with the findings of this study. Path analysis shows that the effects of critical thinking on political paticipation are mostly indirect ones thorugh political efficacy and democratic attitude. The perspectives presented above argue mainly that intellectual skills are a prerequisite to rational and effective participation, but they do no

necessarily preclude the possibility of an indirect connection. Gillespie and Patrick (974) state regarding analytic and methodological intellectual skills: "The acquisition of these skills is important to the development of political competencies necessary foir effectively undertaking a wide range of participants' roles in society" (emphasis added). Several studies support this statement (Easlon & Dennis, 1967; Hess & Torney, 1967, Jennings and Neimi, 1974, chapter 10). They imply that intellectual skills develop political competencies which in turn affect political participation. Patrick (1977) stares that "learning intellectual skills is a key to increasing ability to perceive and cope with one's political world. In addition, those who have competence to appraise and acquire are supposed to have more potential for effective political action than those who lack these skills." The ability to perceive and cope and the potential for effective participation seem to be mediating factors and seem to refer to something akin to political efficacy. Freire (1974), Pranger (1968), and Weissberg (1974) also imply that the knowledge that one can effectively participate is almost as important as actual participatory capability. All of these authors also emphasize the contribution of intellectual skills and abilities to rational activism, thus affirming the mediation of democratic attitude. Thus, the theoretical support for the relationship between critical thinking and political participation can be reanalyzed to show support for indirect effects of critical thinking on political participation.

IMPLICATIONS OF THE RESEARCH

Theoretical Contributions

Two major goals of social studies education are the development of critical thimking skills and citizenship education. A major focus of citizenship education is on participatory attitudes and behavior. This study has theoretical implications that apply to these two goals. The findings strongly suggest that a relationship does exist between critical thinking and political participation. Critical thinking has indirect positive effects on orientations toward and actual political participation. This finding means that critical thinking skills are important beyond their inherent function; critical thinking can also lead to more positive participatory attitudes and behavior. A relationship between the two variables is established, thus linking these two major aims of education in general, and social studies education in particular. The two goals often have been treated as separate and distinct components of education, or the relationship between the two variables has been an assumed one.

This study also establishes how the relationship between critical thinking and political participation functions. Correlational studies can establish only that a relationship exists, but path analysis enables causal paths to be assessed. Critical thinking positively affects personal control, political efficacy, and democratic attitude. Political efficacy and democratic attitude positively affect political participation. Personal control has a strong direct effect on political efficacy. This analysis of the direction of the relationship and the nature of at least some of the intervening variables in the relationship creates a depth of knowledge regarding the development of participatory attitudes and behavior tht has not been part of the literature prior to this study. Most studies have been more limited by the statistical procedures employed.

The field of personality and politics has been a growing one in recent years. Studies linking personality variables with political participation, many of which are used to develop the theoretical framework for the model in this study, have abounded. This study adds to the literature that links political efficacy and democratic attitude with political participation. It also goes beyond the traditional research in that it establishes a cognitive basis to the personality variables and to political participation. The implication of this research is that certain attitudes and behaviors have a cognitive basis that is important to the development of the attitudes and behaviors. Most other studies and works have assumed this cognitive basis but have not empirically validated it. The work of Smith, Burner, and White (1956), Katz (1971), Siegel (1980), Freire (1974) and others cited above are examples of this assumption being made. Some prior studies, such as the work of Sniderman (1975), have more clearly delineated the role of cognition. Yet, this study differs in that it sets cognitive abilities as the antecendent of all of the attitudes and behaviors and makes the assumption from other studies explicit in the model. Personal control, political efficacy, democratic attitude, and political participation (which includes both attitudes and behavior) are all shown to have positive relationship with critical thinking, and path analysis demonstrates that critical thinking has a positive direct effect on personal control, political efficacy, and democratic attitude and positive indirect effects on political participation. Thus, this study provides empirical support for what is only an assumption in other studies. The implication is that many behaviors and attitudes incorporate cognitive components and that if one can identify the cognitive antecedents, then one can gain more knowledge about how to affect the attitudes and behaviors.

Implications for Curriculum and Instruction

If critical thinking is significantly related to political participation and is actually an antecedent to political participatin, as this study indicateds, then the teaching of critical thinking should be a major focus. Citizenship education is the espoused goal of social studies education, and the willingness and ability to participate politically are important facets of citizenship. If by developing the ability to think critically social education can positively affect participatory attitude and behavior, then social studies education can more effectively realize the goal of citizenship education by teaching critical thinking.

The various skills and abilities involved in critical thinking can be tatught in and of themselves, or they can be taught as an integral part of the social studies. Some evidence regarding the effects of pedagogical methodology in critical thinking may indicate the type of social studies education that may be most effective for the teaching of critical thimking.

Four studies, published together as the Indiana Experiments in Inquiry (Massialas, 1963), are directly concerned with the effects of the inquiry methods on critical thinking skills. Each study reports the positive effects of inquiry teaching on critical thinking skills. Armstrong (1970) reports that the use of inquiry strategies sin eighth grade social studies classes increased students' critical thinking performance. In a study of four classes described as inquiry-oriented, tow utilizing a discovery approach and two utilizing a presentation approach, boedeker (1971) concludes that the discovery treatment was most effective in teaching critical thinking skills.

Her description of the two approaches shows that the discovery approach is more closely related to a purely inquiry approach than is the presentation approach. Thus, an implication of the present study, based on the findings of the study and the empirical evidence presented above, is that the teaching of critical thinking skills through the inquiry method may positively affect participatory attitudes and behavior. The inquiry method of teaching may be most effective when the substantive content of instruction is political. Newmann (1975) and Oliver and Shaver (1966) suggest that traditional social studies content will not teach the thinking skills releveant to political thought and action. This research does indicate that the inquiry method made may have an indirect effect on political participation through the development of critical thinking skills, and a fruitful area for future research may be one that incorporates participatory attitudes and behavior in the research design.

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APPENDIX A

SURVEY INSTRUMENT FOR THE MEASUREMENT OF SELF-ESTEEM, PERSONAL CONTROL, POLITICAL EFFICACY, DEMOCRATIC ATTITUDE, AND ATTITUDE TOWARD POLITICAL PARTICIPATION

FOR EACH STATEMENT, CIRCLE THE NUMBER THAT BEST INDICATES HOW YOU FEEL ABOUT THE STATEMENT.

	AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
1. It is as necessary to participate in a political party between elections as it is to participate during elections.	1	2	3	4	5	6	7
2. I believe in free speech for all no matter what their view might be.	1	2	3	4	5	6	7
3. Citizens don't have a chance to say what they think about running the government.	1	2	3	4	5	6	7
4. Protest meetings can be an effective way to correct political wrongs.	1	2	3	4	5	6	7
5. I would participate in a street demonstration to show dislike for government policy.	1	2	3	4	5	6	7
6. I can't do many of the things I'd like to do or do them the way I think they should be done.	1	2	3	4	5	6	7
7. People like me have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	1	2	3	4	5	6	7
8. It is important for people to actively support the candidates they like.	1	2	3	4	5	6	7
9. Disobeying laws, even unjust ones, is not a legitimate means of political action or communication.	1	2	3	4	5	6	7
10. Whether or not I get to be a leader depends mostly on my ability.	1	2	3	4	5	6	7
11. I will probably join and support a political party.	1	2	3	4	5	6	7

	AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
12. A person ought not to be allowed to speak if s/he doesn't know what s/he's talking about.	1	2	3	4	5	6	7
13. There are some things I'm not good at, but a lot of things I can do very well.	1	2	3	4	5	6	7
14. I have often found that what is going to happen will happen.	1	2	3	4	5	6	7
15. I would probably inform a political leader if I thought s/he was doing poorly.	1	2	3	4	5	6	7
16. Street demonstrations are not a legitimate form of political participation.	1	2	3	4	5	6	7
17. I would not attend a protest meeting, no matter how strongly I supported the cause of the participants.	1	2	3	4	5	6	7
18. Public officials should be chosen by majority vote.	1	2	3	4	5	6	7
19. What happens in the government will happen no matter what people do. It is like the weather; there is nothing people can do about it.	1	2	3	4	5	6	7
20. I am the kind of person who can influence how other people decide to vote in elections.	1	2	3	4	5	6	7
21. A book that contains wrong political views cannot be a good book and does not deserve to be published.	1	2	3	4	5	6	7
22. If I join a political party, I will probably only be active during elections.	1	2	3	4	5	6	7

		AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
23.	I don't expect much from myself, either now or in the future.	1	2	3	4	5	6	7
24.	Whether or not I get into a car accident depends mostly on the other driver.	1	2	3	4	5	6	7
25.	I will probably vote in most elections.	1	2	3	4	5	6	7
26.	My ideas are just as good as the next person's.	1	2	3	4	5	6	7
27.	The minority should be free to criticize majority decisions.	1	2	3	4	5	6	7
28.	When I make plans, I am almost certain to make them work.	1	2	3	4	5	6	7
29.	Joining and working in a political party is an effective way of influencing the government.	1	2	3	4	5	6	7
30.	It is not a citizen's duty to inform others in one's community about politics.	1	2	3	4	5	6	7
31.	If a Communist were legally elected mayor of this city, the people should not allow him/her to take office.	1	2	3	4	5	6	7
32.	When I get what I want, it's usually because I'm lucky.	1	2	3	4	5	6	7
33.	If I felt strongly about a public issue, I would try to persuade others to share my point of view.	1	2	3	4	5	6	7
34.	Nobody has a right to tell another person s/he can or cannot read.	1	2	3	4	5	6	7

		AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
35.	It is not useful to join groups which deal with social and political problems.	1	2	3	4	5	6	7
36.	We have to teach children that all people are created equal, but almost everybody knows that some are better than others.	1	2	3	4	5	6	7
37.	I can be very effective in political situations.	1	2	3	4	5	6	7
38.	I feel that what happens in my life is mostly determined by powerful people.	1	2	3	4	5	6	7
39.	If I wanted to, I could get someone in the city government to listen to what I say.	1	2	3	4	5	6	7
40.	It's chiefly a matter of fate whether or not I have few friends or many friends.	1	2	3	4	5	6	7
41.	The main trouble with democracy is that most people don't really know what's best for them.	1	2	3	4	5	6	7
42.	I am potentially capable of influencing political decisions by being part of a group.	1	2	3	4	5	6	7
43.	I might participate in a riot if all other methods had failed to get the government and political leaders to change a policy that was morally wrong.	1	2	3	4	5	6	7
44.	I can pretty much determine what will happen in my life.	1	2	3	4	5	6	7

	AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
45. I would not participate in a march to protest government policy regarding an issue about which I felt strongly.	1	2	3	4	5	6	7
46. I might disobey a law to demonstrate that I thought it was unjust.	1	2	3	4	5	6	7
47. People like me can have quite a bit of influence over the local government.	1	2	3	4	5	6	7
48. Even if all other methods fail, rioting is never a justifiable way of getting the government and political leaders to change policies.	1	2	3	4	5	6	7
49. I am good at figuring things out.	1	2	3	4	5	6	7
50. I'm not sure I have much to offer any employer.	1	2	3	4	5	6	7
51. A protest march is a good way to influence the government and political leaders.	1	2	3	4	5	6	7
52. I would join a group that was trying to get a law passed that I was strongly in favor of.	1	2	3	4	5	6	7
53. I know that I can handle almost any problem with which I am faced.	1	2	3	4	5	6	7
54. If I believe strongly in what I say, I would have a fair chance to influence the government.	1	2	3	4	5	6	7
55. Voting is a waste of time.	1	2	3	4	5	6	7
56. Contacting public officials about a political problem or issue is an effective form of political participation.	1	2	3	4	5	6	7

		AGREE VERY MUCH	AGREE IN GENERAL	AGREE A LITTLE	NO OPINION	DISAGREE A LITTLE	DISAGREE IN GENERAL	DISAGREE VERY MUCH
57.	I'm proud of a lot of things I do.	1	2	3	4	5	6	7
58.	Some people have a better right to run this country because they are better and smarter than other people.	1	2	3	4	5	6	7
59.	I am likely to work for a political candidate.	1	2	3	4	5	6	7
60.	If I joined together with others of similar political ideas, we could cause some of the laws to be changed.	1	2	3	4	5	6	7
61.	Most of the things I really want in life I probably can never attain.	1	2	3	4	5	6	7

NUMBER _____

AGE: _____ RACE: _____BLACK _____WHITE ___OTHER (PLEASE SPECIFY)
_____

SEX: _____FEMALE _____MALE

MOTHER'S EDUCATION:
_____GRADE SCHOOL
_____HIGH SCHOOL
_____TECHNICAL SCHOOL
_____COLLEGE
_____MASTER'S DEGREE
_____DOCTORAL DEGREE
_____LAW DEGREE
_____MEDICAL DEGREE
_____OTHER (PLEASE SPECIFY):_____

FATHER'S EDUCATION
_____GRADE SCHOOL
_____HIGH SCHOOL
_____TECHNICAL SCHOOL
_____COLLEGE
_____MASTER'S DEGREE
_____DOCTORAL DEGREE
_____LAW DEGREE
_____MEDICAL DEGREE
_____OTHER (PLEASE SPECIFY):_____

WHAT DOES YOUR MOTHER DO FOR A LIVING? BE AS SPECIFIC AS POSSIBLE.

WHAT DOES YOUR FATHER DO FOR A LIVING? BE AS SPECIFIC AS POSSIBLE.

WHAT IS YOUR POLITICAL PARTY PREFERENCE:

_____REPUBLICAN _____DEMOCRAT

_____INDEPENDENT _____ OTHER (PLEASE SPECIFY):
_____

WHAT IS YOUR FAMILY INCOME? (INCOME OF YOURSELF OR YOURSELF AND YOUR SPOUSE IF YOU ARE SELF-SUPPORTING. INCOME OF YOUR PARENTS IF THEY SUPPORT YOU OR THEY PARTIALLY SUPPORT YOU.)

_____$0-$8,000
_____$8,001-$15,000
_____$15,001-$25,000
_____$25,001-$40,000
_____Above $40,000

APPENDIX B

ACTUAL POLITICAL PARTICIPATION CHECKLIST

INDICATE WITH A CHECK THE POLITICAL ACTIVITIES IN WHICH YOU HAVE PARTICIPATED.

	FREQUENCY		
	Many Times	A Few Times	Once or Twice
_____ participated in a political party between elections	_____	_____	_____
_____ actively campaigned for a candidate	_____	_____	_____
_____ contributed money to help a party or candidate	_____	_____	_____
_____ worked to get people registered to vote	_____	_____	_____
_____ joined and supported a political party	_____	_____	_____
_____ formed or joined a group to deal with a social or political problem	_____	_____	_____
_____ written a letter to a public official about a political problem or issue	_____	_____	_____
_____ telephoned a public official about a political problem or issue	_____	_____	_____
_____ personally contacted a public official about a political problem or issue	_____	_____	_____
_____ joined in a public street demonstration	_____	_____	_____
_____ rioted to get public officials to right political wrongs	_____	_____	_____
_____ protested vigorously and publicly against moral wrongdoings by the government	_____	_____	_____
_____ attended a protest meeting	_____	_____	_____
_____ joined in a protest march	_____	_____	_____
_____ gone with a group to protest to a public official	_____	_____	_____
_____ refused to obey unjust laws	_____	_____	_____
_____ sent messages of support to political leaders when they are doing well	_____	_____	_____
_____ voted	_____	_____	_____